647510 **MSC3HETC0310** **Seat No: _____**

M.Sc. Semester - 3 (*CBCS*) Examination

Oct/Nov. - 2018

HETEROCYCLIC CHEMISTRY (CORE)

Time: 2:30 Hours **Marks: 70**

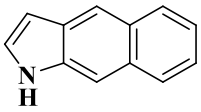
Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

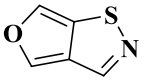
Q.1 Answer any **seven** of the following ten questions. [14 Marks]

Give IUPAC nomenclature of the following heterocycles.

1.

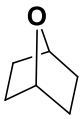


(a)

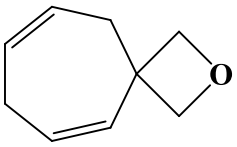


(b)

2.

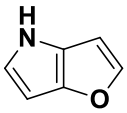


(b)

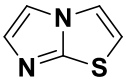


(b)

3.



(a)



(b)

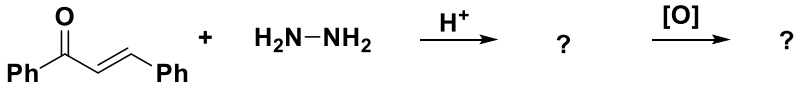
4. Give IUPAC name of: (a) 1*H*-Indole (b) Quinoline

5. Why electrophilic attack occur at position-2 in pyrrole?

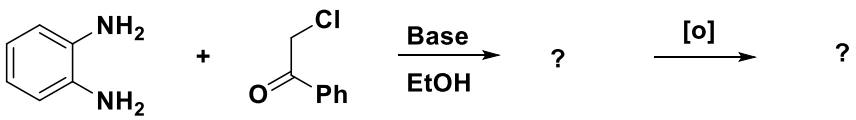
6. Why pyridine is more basic than pyrrole?

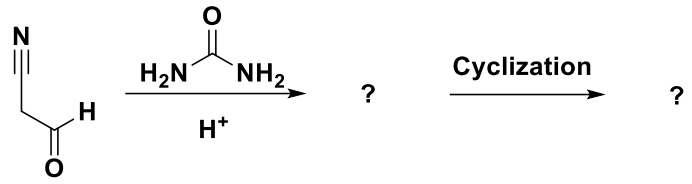
Complete the following chemical reactions.

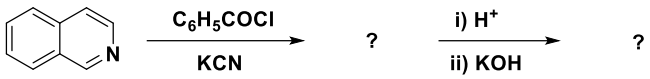
7.



8.



9. 

10. 

Q.2 Answer any **two** of the following three questions. [14 Marks]

1. Give any three synthesis of Diazepine.
2. Enlist any three synthesis of Triazole.
3. Write at least three synthesis of (i) Oxiran (ii) Thietane

Q.3 Answer the following questions. [14 Marks]

1. Describe preparation and properties of Aziridine.
2. Write any three synthesis of Pyrimidine

OR

Q.3 Answer the following questions. [14 Marks]

1. Give three synthesis of (a) Diazirine (b) Indolizine.
2. Explain chemical reactivity of Thianaphthene.

Q.4 Answer any **two** of the following three questions. [14 Marks]

1. Describe the chemical reactivity of Pyrazole
2. Discuss preparation and properties of Pyridazine.
3. Describe physical properties and three preparation of benzofuran.

Q.5 Answer any **two** of the following four questions. [14 Marks]

Give three syntheses for following heterocycles:

1. Thiepine

2. Isoxazole

3. 2-pyrone

4. Quinoxaline

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